

**Amendments to the Specification:**

Please replace the paragraph beginning at page 6, line 18, with the following rewritten paragraph:

Aluminum sulfate suitable for use in practicing the invention may be of essentially any commercially available grade. As used herein, amounts of aluminum sulfate recited in the text refer to commercially available aluminum sulfate hydrate, according to the formula  $\text{Al}_2(\text{SO}_4)_3 \cdot x\text{H}_2\text{O}$ , where x is a number between 14 and 18. Anhydrous aluminum sulfate may also be used, with adjustment made in order to provide the same amount of aluminum. Aqueous aluminum sulfate may also be used, with adjustment made on the same basis. Alternatively, or in addition, aluminum sulfate may be generated *in situ* from an aluminum sulfate precursor, at a time prior to treatment of the ferrous metal. By "aluminum sulfate precursor" is meant a material that converts at least partially to aluminum sulfate prior to treatment of the ferrous metal. Thus for example alumina trihydrate may be used in place of aluminum sulfate, providing that it is converted via reaction with sulfuric acid to aluminum sulfate prior to treatment of the ferrous metal. The aluminum sulfate or its precursor may be present in a dry basis amount (reported as  $\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$ ) of between about 30 wt.% and about 90 wt.% of the composition, preferably between about 40 wt.% and about 80 wt.%, and more preferably between about 50 wt.% and about 70 wt.%. The term "dry basis" as used herein refers to composition percentages not including water added as a solvent or dispersant for the composition. Thus,  $\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$  is 100% aluminum sulfate on a dry basis, because the water in the hydrate is chemically bound and not added as a solvent or dispersant.

Please replace the paragraph beginning at page 8, line 4, with the following rewritten paragraph:

Polycarboxylic acids suitable for use in practicing the invention are organic acids having two or more carboxylic acid groups per molecule. The polycarboxylic acid may itself be used, or

may be formed from a polycarboxylic acid precursor. Such a precursor may for example be a water-soluble salt (typically sodium, potassium, or ammonium), or in a form comprising both acid and salt form of the polycarboxylic acid. Or the precursor may be an ester or anhydride form of the polycarboxylic acid, which may be converted to the ester form by hydrolysis in the acidic aqueous mixture used for treating the ferrous metal. Under the low-pH conditions of the composition as it is used (see below), all of these species are substantially converted by equilibration to their acid form in the aqueous mixture, regardless of the degree of neutralization of the polycarboxylic acid in the starting composition. Suitable polycarboxylic acids for use in practicing the invention include, but are not limited to, oxalic acid, malonic acid, succinic acid, glutaric acid, adipic acid, azelaic acid, citric acid, aspartic acid, glutamic acid, and mixtures of any of these. The polycarboxylic acid or its precursor may be present in a dry basis amount of between about 2 wt.% and about 15 wt.% of the composition, preferably between about 2 wt.% and about 5 wt%. In some formulations, the amount may be higher, for example about 10 wt.% to about 20 wt.%.

Please add the following new paragraph after the paragraph ending on line 22 of page 8:

In a preferred embodiment of the invention, the polycarboxylic acid comprises at least one of oxalic acid and citric acid, and at least one of adipic acid and azelaic acid. In one exemplary embodiment, the formulation comprises between about 40 wt.% and about 80 wt.% of aluminum sulfate, between about 10 wt.% and about 20 wt.% total of at least one of boric acid and a boric acid precursor, and between about 10 wt.% and about 20 wt.% of at least one of a polycarboxylic acid and a polycarboxylic acid precursor. Such a formulation may, in another embodiment, additionally include between about 5 wt.% and about 10 wt.% of citric acid, between about 2 wt.% and about 5 wt.% of pentaerythritol, between about 2 wt.% and about 5 wt.% of adipic acid, and between about 1 wt.% and about 3 wt.% of L-aspartic acid. In yet another exemplary embodiment, the invention provides a composition comprising between

about 50 wt.% and about 70 wt.% of aluminum sulfate, between about 10 wt.% and about 15 wt.% of boric acid, between about 5 wt.% and about 15 wt.% of oxalic acid, between about 2 wt.% and about 7 wt.% of citric acid, between about 2 wt.% and about 7 wt.% of adipic acid, between about 1 wt.% and about 5 wt.% of pentaerythritol, between about 1 wt.% and about 5 wt.% of trimethylolpropane, between about 0.5 wt.% and about 2 wt.% of azelaic acid, and between about 1 wt.% and about 5 wt.% of L-aspartic acid, D-aspartic acid, or a mixture thereof.

Please replace the paragraph beginning at page 11, line 14, with the following rewritten paragraph:

Optionally, the aqueous mixture is brought to a temperature between about 120°F and about 210°F prior to contacting the surface of the ferrous metal with it. If the ferrous metal is a low-carbon steel, it is preferred that the temperature of the aqueous mixture be between about ~~190~~185°F and about 200°F. If medium-carbon steel is used, the preferred temperature is between about 170°F and about 200°F, and if high-carbon steel is used, the preferred temperature is between about 150°F and about 200°F.